ALLEN BIAGGI, *Administrator*

(775) 687-4670

Administration
Facsimile 687-5856

Water Quality Planning
Water Pollution Control
Facsimile 687-4684

Mining Regulations & Reclamation
Facsimile 684-5259

State of Nevada
KENNY C. GUINN
Governor

R. MICHAEL TURNIPSEED,
Director

Air Pollution Control
Air Quality Planning
Facsimile 687-6396

Waste Management
Federal Facilities

Corrective Actions
Facsimile 687-8335

NDEP.nv.gov

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
333 W. Nye Lane, Room 138
Carson City, Nevada 89706

March 30, 2004

Carl Gertz
Assistant Manager for Environmental Restoration
National Nuclear Security Administration
Nevada Site Office
P.O. Box 98518
Las Vegas, NV 89193-8518

RE: Nevada Test Site Risk-Based End State Document

The Nevada Division of Environmental Protection, Bureau of Federal Facilities (NDEP) staff has reviewed the February 2004 draft of the Nevada Test Site Risk-Based End State Vision document. NDEP agrees that the end-state discussed in the document -- that the Nevada Test Site (NTS) will be remediated in a manner that will allow the national security mission assigned to the Nevada Site Office to continue into the future -- is appropriate. The NDEP is, however, concerned with specific end-state visions for some of the "hazard areas" addressed within the document. We are also concerned with the limited scope of the document. The following comments are intended to provide you with further detail regarding our concerns.

The NDEP is concerned with the scope of the document in that it appears to be written from the point of view of the Environmental Management (EM) program with limited acknowledgment of the landlord responsibility for current programs and for their future responsibility for continuing stewardship activities. With only a reference to Defense Program (DP) and Defense Threat Reduction Agency cleanup activities and no further details, the document is incomplete from the perspective of presenting a clear and complete end-state vision. Additional consideration of these activities in the document is

necessary to provide a complete picture of current and future activities at the NTS. In addition, the continuing role and responsibility of the landlord in public involvement and in other currently committed activities is not adequately addressed in the document.

The document includes as Attachment A, a variance report that makes the assumption that certain contaminated sites on the NTS and Nellis Air Force Range (NAFR) will not be subject to further characterization; rather, they will be fenced and posted This table seems to present the only discussion of the extent of diversion of the proposed end-state vision for these sites from the established requirements for these sites. We believe an extensive discussion of the current requirements is appropriate within the document as each vision is presented.

Regardless of how DOE addresses the proposed vision, the NDEP cannot agree to abandonment of characterization and appropriate remediation of the Soils Project sites, as suggested in the document. Further characterization and "hot spot" remediation is clearly established within the Project Management Plan prepared in accordance with the Letter of Intent signed by both the Department of Energy (DOE) and the state. Characterization of these sites is necessary before long-term risk can be fully understood and before further decisions can be made regarding appropriate remediation or control measures for the site.

The statement is made in several places in the document that the end-state for Hazard Area 1 (subsurface radiological contamination) has been reached. NDEP does not agree that this end-state has been reached. The Underground Test Area (UGTA) project is only at the beginning of the process that would lead to an agreement on the end-state for Hazard Area 1. This assertion should be changed in the document to reflect the actual status of the project and indicate the scope of work yet to be completed.

The following are specific comments on the document and reflect the concerns stated above.

Pg. i: *"This report only addresses sites controlled by DOE National Nuclear Security Administration (NNSA) Nevada Site Office (NSO) Environmental Management (EM). This document does not address…"*

> All environmental restoration should be covered in the same document since this is the RBES for the NTS.

Pg. ii: *"Risks to human health are associated with the subsurface contamination via the groundwater pathway both on and off the NTS. The risk-based end state for Hazard Area 1 has already been achieved." And also in* Section 4.1.2, pg. 62: *"The DOE has achieved the RBES for the subsurface at the NTS."*

> As stated above, the risk-based end state for Hazard Area 1 has not been achieved. A Corrective Action Decision Document (CADD) has not been prepared for any of the UGTA CAUs (CAU 97 - Yucca Flat/Climax Mine, CAU 98 - Frenchman

Flat, CAU 99 – Rainier Mesa/Shoshone Mountain, and CAUs 101 and 102 - Central and Western Pahute Mesas). After the CADD has been prepared and approved by NDEP, a determination will then be made as to the type of

Corrective Action Plan (CAP) that is warranted for each UGTA CAU. This will either be a Contaminant Control CAP or a Long-Term Monitoring CAP. This decision has not been made for any of the UGTA CAUs. It is not appropriate to assume that contaminant control will not be required. The end state will not be reached at each UGTA CAU until all of the following have been completed and approved by NDEP: the modeled contaminant boundary, the DOE-NDEP negotiated compliance boundary, the monitoring well networks, and five years of successful "Proof of Concept" monitoring.

Pg. iii, second paragraph: Reference is made in a general way to historic nuclear detonations, weapons safety experiments, rocket engine development and hydro-nuclear testing areas.

More detail may be necessary to explain the context and scope of the work to be accomplished. For example there are at least 60 specific sites that are listed in Appendix II of the FFACO. Corrective action sites (CASs) are defined in the FFACO as "sites potentially requiring corrective action(s) and may include solid waste management units, or individual disposal or release sites". Corrective action unit (CAU) is defined as "one or more corrective action sites grouped geographically, by technical similarity, agency responsibility, or for other appropriate reasons, for purposes of determining corrective actions."

Pg. iii: *"The RBES for Hazard Area 1 will include development of contaminant boundaries based on the groundwater modeling results and five-year Proof-of-Concept."*

The contaminant boundary is not based on the five-year proof-of-concept. This should simply state that the contaminant boundary would be based on the results of the groundwater flow and transport modeling.

Pg. iii: The words "site control relinquished" is used with reference to actions once remediation is completed.

The Department of Energy (DOE) and the Air Force have a MOU/MOA that outlines DOE's continuing commitment to remediate the sites on the Range should the Air Force need the contamination to be reduced based on land use and/or withdrawal status. It is not clear when or under what criteria site control would be relinquished.

Pg. iv: Reference is made to "turned over to the landlords."

It needs to be explained, in detail, how such a turnover process would happen and the conditions for acceptance of responsibility.

Pg.2: *" Once EM has completed its characterization/remediation scope of work, the remaining monitoring and long-term management activities will revert to the respective*

organizations responsible for conducting on-going missions (currently DoD for the TTR and DOE/NNSA for the NTS)."

> Has the role of DOE/NNSA in this case been clearly accepted, planned for and documented?

Pg. 5: Section 1.2.1 Environmental Management Program, Environmental Restoration, Section 4.1 Hazard Area1-Deep Subsurface Radiological Contamination, and Section 4.1.1 Current-State, *Number and Types of Detonations,* includes reference to the number of nuclear detonations.

> The number of underground nuclear tests on the NTS appears to conflict between sections 1.2.1, 4.1, and 4.1.1.

Pg. 12, Section 1.3.2: It is stated that "removal of only the contamination that poses an unacceptable risk to workers conducting planned site operations in support of the NSO mission and characterizing/stabilizing the remainder of contamination to ensure effluent levels do not spread to the surrounding environment to an intolerable degree."

> The vision portrayed in the first paragraph of this section appears to be narrowly focused and in conflict with the established requirements in other documents. It is unclear what "intolerable degree" means. The FFACO addresses remediation in ways that address regulatory requirements and waters of the state. The NDEP contends that these established requirements must be addressed and adhered to.

Pg. 12, Section 1,3.2: Terminology is used that is undefined in the text.

> The terms "source-control performance standard" and "necessary and sufficient" is used in the second paragraph of this section and is undefined with respect to its application to the end-state discussion. The paragraph is so filled with jargon that its meaning is unclear. Additional clarification is needed in this discussion.

Pg. 18, Section 1.3.5: this section discusses Public Involvement in relation to what has been performed by EM only.

> This section does not reflect the long-term commitment of DOE/NNSA to the continuation of a public involvement process related to the landlord responsibilities into the future. Without some discussion, it raises a question regarding the end-state commitment to long-term stewardship.

Pg. 31, Section 3.3: This section discusses the legal ownership context of the NTS in a brief manner.

The NDEP believes that there is a barrier to use of the NTS as a waste disposal site. A discussion of the adequacy of the withdrawals and the current status of negotiations with the Department of Interior is needed.

Pg. 61 Section 4.1.2: Risk-Based End-State, lists in bullet form the steps to achieving the end-state as*:*

- *Flow and transport modeling to predict contaminant boundary*
- *Compliance boundary negotiated with NDEP*
- *Five-year Proof-of-Concept (monitoring) followed by development/deployment of monitoring network*
- *Long-term groundwater monitoring*
- *Landowner will continue to be the NNSA*
- *Institutional controls to prevent public access to contaminated groundwater*

Per the FFACO, Appendix VI, a five-year proof of concept period follows the modeling of the contaminant boundary and negotiation of the compliance boundary using groundwater wells in a monitoring network to determine if the monitoring network design will provide adequate CAU surveillance. If the monitoring network is found to be acceptable after the five-year proof of concept period, a closure plan will then be developed, followed by implementation of a long-term closure monitoring program.

The long-term closure monitoring program will address any contamination left in place in a closed CAU. This program consists of all activities necessary to ensure protection of human health and the environment following the completion of corrective actions at a CAU. These activities will include periodic analysis of monitoring results, determining optimum performance indicators, evaluation of monitoring performance criteria, locating new monitoring wells and replacing existing monitoring wells to support performance criteria evaluation at timed intervals of interest within the 1,000-year time period.

Additional clarification of this topic is necessary to understand the process identified.

Pg. 62, Section 4.1.2: *"The DOE has achieved the RBES for the subsurface at the NTS."*

As noted above, NDEP does not agree that the risk-based end state for Hazard Area 1 has been achieved.

Pg. 63 Closure of Hazard Area 1: *"Post-closure surveillance and monitoring are assumed for 100 years because underground test areas cannot be cost-effectively remediated using existing technologies."*

This statement is incorrect. Post-closure surveillance and monitoring of the underground test area is expected to continue in perpetuity due primarily to the nature of the contaminants that will remain in the subsurface areas as a result of historical nuclear testing and the lack of cost-effective technologies to remediate these subsurface test areas.

Pg. 64: "Map 4.1b1 depicts the deep underground site hazard map for the end state."

This map currently shows the original CAU boundaries and current locations of various monitoring wells. The "end-state" is not shown on this map.

Pg. 66: The opening paragraph mentions rocket engine development and hydronuclear tests. These topics are not discussed in the text while the other projects are. Additional information regarding these activities and associated contamination is needed.

Pg. 69: "gamma carriers" in paragraph 1 may be more correctly stated as gamma emitters.

Pg. 72, paragraph 2 and pg. 73, third paragraph: The document restates that no further characterization of contaminated areas will be conducted on the NTS and NAFR. The NDEP cannot agree with this vision. Additional characterization is necessary to fully evaluate the potential for long-term risk and to determine appropriate remediation or control.

Pg. 87, Attachment A: NDEP does not agree with the conclusions reached in this Attachment. As discussed above further characterization and consideration of these sites is necessary.

These comments have been prepared after limited review by NDEP staff and management. They reflect a concern that further discussion may be necessary before NDEP agrees that an end-state vision has been clearly defined for the NTS. We would be pleased to discuss these comments with you in more detail. Address any questions regarding this matter to either Don Elle at (702) 486-2874 or me at (702) 486-2857.

Sincerely,

Terre Maize, CEM
Chief
Bureau of Federal Facilities

TAM/ KKB/EN/MS/DRE

cc: Ken Hoar, Director, ES&HD, NNSA/NSO
Eric Shanholtz, Chief, DTRA

Patti Hall, EM, NNSA/ NSO
Frank Di Sanza, WMD, NNSA/ NSO
Wayne Griffin, BN/DTRA
Tiffany Lantow, DTRA/TDTON
Monica Sanchez, ERD, NNSA/NSO
Peter Sanders, ERD, NNSA/NSO
Robert Bangerter, ERD, NNSA/NSO